

IN THE CLAIMS:

Please cancel claims 1-13 and add claims 14-27 as provided below.

1-13. (Cancelled).

14. (New) A photodiode arrangement, comprising:
a photodiode; and
a submount that is electrically contact-connected to the photodiode,
wherein the photodiode comprises a metallization on a side facing the submount,
the submount comprises a metallization on a side facing the photodiode, and
the photodiode and the submount are connected to one another by means of
eutectic bonding.

15. (New) The arrangement as claimed in claim 14, further comprising one or
more alignment marks situated on the photodiode or the submount or on both the
photodiode and the submount.

16. (New) The arrangement as claimed in claim 14, wherein the photodiode or
the submount or both comprise a silicon chip.

17. (New) The arrangement as claimed in claim 14, wherein the photodiode
and the submount each have an outer contour that differs from one another and,
accordingly, comprise regions that protrude relative to one another.

18. (New) The arrangement as claimed in claim 17, further comprising contact
pads situated on a region of the submount that protrudes with respect to the
photodiode, wherein said contact pads are connected to the metallization of the
submount.

19. (New) The arrangement as claimed in claim 17, wherein the photodiode comprises an optically active area situated on a region of the photodiode that protrudes with respect to the submount.

20. (New) The arrangement as claimed in claim 14, wherein the metallization of the photodiode comprises a gold metallization and the metallization of the submount comprises a gold-tin metallization, or vice versa.

21. (New) The arrangement as claimed in claim 14, wherein one of the photodiode and the submount comprise a trench or cutout on the side facing the other of the photodiode and the submount, thereby ensuring a connection between the photodiode and the submount only in defined regions not associated with the trench.

22. (New) A method for producing a connection between a first semiconductor component comprising a photodiode and a second semiconductor component comprising a submount, wherein the semiconductor components connected to one another each have an outer contour that differs from the other, comprising:

- a) producing a plurality of first semiconductor components on a first wafer;
- b) producing a plurality of second semiconductor components on a second wafer;
- c) providing a metallization on the first semiconductor components of the first wafer;
- d) providing a metallization on the second semiconductor components of the second wafer;
- e) forming trenches in the first or the second semiconductor components, or both first and second semiconductor components; then
- f) connecting the two wafers by eutectic bonding of the respective metallizations, the resulting wafer composite having a front side and a rear side; then

g) singulating the front side of the wafer composite in accordance with a first outer contour of the first semiconductor components to be singulated, only one wafer being severed; and subsequently

h) singulating the rear side of the wafer composite in accordance with a second outer contour of the second semiconductor components to be singulated, only the other wafer being severed.

23. (New) The method as claimed in claim 22, further comprising turning the wafer composite between the two singulation steps.

24. (New) The method as claimed in claim 22, further comprising providing alignment marks on the wafers.

25. (New) The method as claimed in claim 22, further comprising releasing an end component that has been singulated on both sides from the wafer composite and supplying the end component to an automated apparatus for further processing.

26. (New) The method as claimed in claim 22, further comprising connecting a gold metallization of the first semiconductor components to a gold-tin metallization of the second semiconductor components during the eutectic bonding of the two wafers.

27. (New) The method as claimed in claim 22, wherein the singulation is effected in each case by sawing.